

Use of observations by the Copernicus Atmosphere Monitoring Service for data assimilation and product evaluation over Europe

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The Regional Copernicus Atmosphere Monitoring Service (CAMS) delivers Air Quality forecasts, analyses and reanalyses over Europe. The service is based on seven operational models (CHIMERE, EMEP/MSC-W, EURAD-IM, LOTOS-EUROS, MATCH, MOCAGE, SILAM) that are operated in time-critical conditions to deliver an ensemble. In-situ data and satellite observations over Europe are used by the Regional CAMS models as input for data assimilation and for the continuous evaluation of the forecasts, analyses and reanalyses.

We will present the observation datasets that are used and the data flow that allows to evaluate the products against un-assimilated datasets. Then we will outline the main features of the data assimilation systems that are operated, with their specificities. The added value of assimilation on the surface concentrations will be presented for all species, including the un-assimilated species. The experience gained from Regional CAMS is also helpful to assess the benefit of assimilation for initializing air quality forecasts and to investigate the use of satellite observations for improving surface concentrations.

The perspectives of Regional CAMS assimilation systems and of the future usage of observation datasets will finally be outlined.

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